

APPLICATION OF ERTS AND EREP IMAGES TO GEOLOGIC INVESTIGATIONS
OF THE BASIN AND RANGE - COLORADO PLATEAU BOUNDARY
IN NORTHWESTERN AND NORTH-CENTRAL ARIZONA

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Significant Results

No report.

Problems

We are continuing to encounter severe problems with the CCT's. Our previous experience with line dropouts and bit errors could be explained by the fact that the tapes were from the early portion of the mission. However, we are continuing to experience similar problems with tapes ordered in April of scenes taken by ERTS in November and February. We have had to allot over 60% of our processing and analysis time to cleaning up the NDPF tapes. In addition, we are receiving 9 track instead of the 7 track tapes requested. If this continues it will be a costly problem for us since the conversion costs \$7 per tape.

Accomplishments and Plans

Shivwitz Plateau

Office work in compilation and analysis of the field data is continuing. This process will be lengthy since some 2000 square miles were covered in this area. Contacts were established and data presented to the chiefs of the Arizona Bureau of Mines and the Arizona Oil and Gas Commission. Both agencies are very interested in the results of this work.

Cataract Creek

One third of the area has now been mapped. Fourteen units are identified and the first portion of the map has been compiled. Since the initial

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mapping took place in the forested region near the south rim of the Grand Canyon, little if any correlation can be made between processed ERTS photography and groundbased mapping. However, as the mapping progresses into more sparsely vegetated terrain, better correlations will be possible.

A fault map has been constructed from the ERTS photography and further correlation will be made as the field work continues.

Central Arizona

Geologic mapping at 1:5,000 scale in part of the Hackberry Mountain area has been completed and compiled, and is presently being scribed for report purposes. Geologic mapping of the Hackberry Mountain volcanic center at 1:62,500 scale is nearly complete. Scribing for the topographic base for both of the above geologic maps is approximately 75% completed.

Copies of the regional geologic and structure maps compiled from ERTS-1 photographs have been supplied to Mr. Jack N. Conley, Director of the Geology Section, Oil and Gas Conservation Commission, State of Arizona, at their request. The structure map is the same as that which was published in Geotimes, v. 18, no. 5, dated May 1973.

Image Processing

A number of scenes are being reprocessed now that we have had some experience in the field. Ratio images reproduced in color have the greatest potential for the separation of units in unvegetated areas. As the vegetation cover approaches 50% the ability to discriminate among units is greatly reduced since band 7 plays an important role in the discrimination scheme.

Future work will continue to concentrate on the correlation between processed and enhanced images and the field mapped units.